

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0028789

Owner: City of Centralia
Address: 114 South Rollins, Centralia, MO 65240

Continuing Authority: Same as above
Address: Same as above

Facility Name: Centralia Wastewater Disposal Facility
Facility Address: See Page 2, Centralia, MO 65240

Legal Description: See page 2

Receiving Stream: #001 and #005: Tributary to Goodwater Creek (U);
#002 and #006: Tributary to Youngs Creek (U);
#003 and #004: Tributary to Long Branch (U)

First Classified Stream and ID: #001, #002, #005, and #006: Youngs Creek (C) (00140);
#003 and #004: Long Branch (C) (00139)

USGS Basin & Sub-watershed No.: #001, #002, #005, and #006: 07110006-030001;
#003 and #004: 07110006-030002

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

July 26, 2002
Effective Date

July 29, 2005
Revised Date


Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

July 25, 2007
Expiration Date
MO 780-0041 (10-93)

G. Irene Crawford, Director, Northeast Regional Office

FACILITY DESCRIPTION (continued)

Outfall #001 - Northwest System - SIC #4952

Two cell lagoon/spray irrigation/sludge is retained in lagoon.

Design population equivalent is 1,460.

Design flow is 146,000 gallons per day.

Actual flow is 97,000 gallons per day.

Design sludge production is 22 dry tons/year.

Address: Fountain Road, Centralia, MO 65240

Legal Description: NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 9, T51N, R11W, Boone County

Outfall #002 - Northeast System - SIC #4952

Two cell lagoon/spray irrigation or overland flow/sludge is retained in lagoon.

Design population equivalent is 6,600.

Design flow is 660,000 gallons per day.

Actual flow is 408,000 gallons per day.

Design sludge production is 99 dry tons/year.

Address: Ann Avenue, Centralia, MO 65240

Legal Description: NE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 11, T51N, R11W, Boone County &
N $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 12, T51N, R11W, Audrain County

Outfall #003 - Sims Storage Cell - SIC #4952

Stores pumped effluent from Outfalls #001 & #002 for irrigation.

99,899,000 gallons stored. 21.9 acres 14 feet deep.

Irrigates 285 acres.

Address: Gravel Road 133, Centralia, MO 65240

Legal Description: NE $\frac{1}{4}$, SE $\frac{1}{4}$, Sec. 25, T52N, R12W, Audrain County

Outfall #004 - Bowne Storage Cell - SIC #4952

Stores pumped effluent from Outfalls #001 & #002 for irrigation.

20,800,000 gallons stored. 5.32 acres 12 feet deep.

Irrigates 35 acres.

Address: Highway 151 West, Centralia, MO 65240

Legal Description: NE $\frac{1}{4}$, NE $\frac{1}{4}$, Sec. 1, T51N, R12W, Boone County

Outfall #005 - Benoit Storage Cell - SIC #4952

Stores pumped effluent from Outfalls #001 & #002 for irrigation.

26,899,014 gallons stored. 4.99 acres 16 feet deep.

Irrigates 62 acres.

Address: East Countyline Road 13500, Centralia, MO 65240

Legal Description: NW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 2, T51N, R11W, Boone County

Outfall #006 - Northeast Lagoon Overland Flow System- SIC #4952

3-3.73 Acre Emergency Discharge Overland Flow Fields

Design population equivalent is 6,600.

Design flow is 660,000 gallons per day.

Address: Ann Avenue, Centralia, MO 65240

Legal Description: SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 12, T51N, R11W, Audrain County

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 10	
					PERMIT NUMBER MO-0028789	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #001 - #006</u> (Notes 1 & 2)						
Flow	MGD	*		*	once/day when discharge occurs	24 hr. estimate
Rainfall	Inches	*			every event	total/day
Biochemical Oxygen Demand ₅ **	mg/L		45	30	once/week****	grab
Total Suspended Solids**	mg/L		45	30	once/week****	grab
PH - Units	SU	***		***	once/week****	grab
Temperature	F	*		*	once/month****	grab
Oil and Grease	mg/L	15		10	once/month****	grab
Total Kjeldahl Nitrogen	mg/L	*		*	once/month****	grab
NO ₂ and NO ₃ as N	mg/L	*		*	once/month****	grab
Ammonia as N					once/month****	grab
Summer (April - October)	mg/L	1.6		0.8		
Winter (November - March)	mg/L	2.9		1.4		
Total Phosphorus	mg/L	*		*	once/month****	grab
Hardness (as CaCO ₃)	mg/L	*		*	once/month****	grab
Aluminum, Total	µg/L	748.7		373.2	once/quarter*****	grab
Copper, Total Recoverable	µg/L	42.9		21.4	once/quarter*****	grab
Cyanide, Amenable to Chlorination	µg/L	8.19		4.1	once/quarter*****	grab
Iron, Total Recoverable	µg/L	1639		816.4	once/quarter*****	grab
Zinc, Total Recoverable	µg/L	370.4		184.6	once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2002</u> .						
<u>Outfalls #001 & #002</u> Whole Effluent Toxicity (WET) Test	See Special Condition #8			once/year in September 24 hr. composite		
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2005</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 10	
					PERMIT NUMBER MO-0028789	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #003 - #005</u> (Note 3)						
Lagoon Freeboard	Feet	*			once/month*****	measured
Irrigation Period	Hours	*			once/day*****	total
Volume Irrigated	gallons	*			once/day*****	total
Application Area	acres	*			once/day*****	total
Application Rate	inches/ acre	*			once/day*****	total
Rainfall	inches	*			once/day*****	total
<u>Irrigated Wastewater</u> (Notes 4 & 5)						
pH - Units	SU	***			once/month	grab
Total Kjeldahl Nitrogen as N	mg/L	*			once/month	grab
Total Phosphorus as P	mg/L	*			once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>January 28, 2004</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** This facility is required to meet a removal efficiency of 65% or more.
- *** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
- **** Sample when discharge occurs.
- ***** Sample once per quarter when discharge occurs in the months of January - March, April - June, July - September, and October - December.
- ***** Daily records shall be maintained and summarized into an annual operating report which shall be submitted January 28 of the following year. This report shall contain but not be limited to the following:
 - (a) record of maintenance and repairs performed during the year;
 - (b) average number of times per month the facility is checked to see if it is operating properly;
 - (c) the number of days the lagoon has discharged during the year, the discharge flow, the reasons discharge and effluent analysis performed;
 - (d) description of any unusual operating conditions encountered during the year; and
 - (e) a summary of the irrigation operations including lagoon freeboard at the start and end of the irrigation season, the number of days of irrigation for each month, the total gallons irrigated, the total acres used, the application rate in inches/acre for the year and the total precipitation received at the facility.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 1 - **Partial Irrigation (consumptive irrigation)**. Wastewater shall be used during the growing season for consumptive irrigation on crop land when additional water is needed to supply crop moisture requirements. There shall be no discharge of wastewater during normal operation from April 1 to October 31. Sufficient acreage of land application area to provide for lagoon drawdown during suitable soil and weather conditions shall be available.

Note 2 - Notify the department as soon as possible and no later than within 48 hours of any discharge that occurs.

Note 3 - Lagoon freeboard shall be reported as lagoon water level in feet below the overflow level.

Note 4 - Wastewater that is irrigated shall be sampled at the irrigation pump or wet well.

Note 5 - While limitations are not applied to the wastewater being land applied, the monthly application rates for nitrogen shall be adjusted to that plant available nitrogen does not exceed the crop uptake rate for nitrogen.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
 - (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
2. The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable. All outfalls must be clearly marked in the field.
3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

C. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

- (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
- (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
- (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
- (e) There shall be no significant human health hazard from incidental contact with the water;
- (f) There shall be no acute toxicity to livestock or wildlife watering;
- (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
- (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

C. SPECIAL CONDITIONS (continued)

8. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
#001	100%	Annually	24 hr. composite	September
#002	100%	Annually	24 hr. composite	September

a. Test Schedule and Follow-Up Requirements

- (1) Perform a single-dilution test in the months and at the frequency specified above.

If the effluent passes the test, do not repeat the test until the next test period. Submit results with the annual report.

If the effluent fails the test, a multiple dilution test shall be performed within 30 days, and biweekly thereafter, until one of the following conditions are met:

- (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (2) The permittee shall submit a summary of all test results for the test series to the WPCP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 days of the third failed test. DNR will contact the permittee with initial guidance on conducting a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE). The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPCP within 60 days of the date of DNR's letter. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
- (3) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
- (4) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
- (5) In addition to the WET test summary report required in part (2), all failing test results shall be reported to DNR within 14 days of the availability of the results.
- (6) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October. When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

C. SPECIAL CONDITIONS (continued)

8. Whole Effluent Toxicity (WET) (continued)

b. PASS/FAIL procedure and effluent limitations

- (1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.
- (2) To pass a multiple-dilution test:
 - (a) the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; or,
 - (b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

c. Test Conditions

- (1) Test species: *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow). Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.
- (2) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.
- (3) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
- (4) Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after sample collection.
- (5) Single-dilution tests will be run with:
 - (a) Effluent at the AEC concentration;
 - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
 - (c) reconstituted water.
- (6) Multiple-dilution tests will be run with:
 - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, $1/2$ AEC and $1/4$ AEC;
 - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
 - (c) reconstituted water.
- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

C. SPECIAL CONDITIONS (continued)

9. Lagoons and earthen basins shall have a liner that is designed, constructed and maintained in accordance with 10 CSR 20-8.020(13)(A)4. If operating records indicate, excessive percolation, the department may require a water balance test in accordance with 10 CSR 20-8.020(16) or other investigations to evaluate adequacy of the lagoon seal. The department may require corrective action as necessary to eliminate excess leakage.

10. Wastewater Irrigation System.

a. Discharge Reporting. Any unauthorized discharge from the lagoon or irrigation system shall be reported to the department as soon as possible but always within 48 hours. Discharge is allowed only as described in the Facility Description and Effluent Limitations sections of this permit.

b. Irrigation Design. Design and operation shall be in accordance with 10 CSR 20-8.020(15). Permittee shall operate the land application system in accordance with the design parameters listed in the Facility Description section of this permit:

(2) Partial Irrigation System. When the Facility Description is "Partial Irrigation" or combined irrigation and discharge, wastewater will be irrigated when feasible and discharges are allowed as specifically authorized under the Effluent Limitations and Monitoring Requirements in Section A of this permit.

c. Lagoon Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage lagoon shall be clearly marked. Each lagoon shall be operated so that the maximum water elevation does not exceed one foot below the overflow point except due to exceedances of the 1-in-10 year or 25-year-24 hour storm events.

d. Emergency Spillway. Lagoons and earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm. The department may waive the requirement for overflow structures on small existing basins.

e. Land Application Site Locations. The permittee shall land apply only to suitable sites located within the overall property boundaries and descriptions listed in the permit application and approved Operation and Maintenance Manual. Permittee requests for additional sites including non-owned property must follow permit modification procedures prior to land application. To request additional sites, the permittee should submit a revised application Form A and I, mailing addresses for first down stream land owners of each site, topographic maps and other pertinent information for the proposed sites.

f. Land Application Equipment. The land application system shall be operated so as to provide uniform distribution of applied wastes over the entire application site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation.

g. Saturated/Frozen Conditions. There shall be no irrigation during frozen, snow covered, or saturated soil conditions. There shall be no spray irrigation on days when more than 0.2 inch of precipitation is received or when there is observation by operator of an imminent or impending rainfall event.

C. SPECIAL CONDITIONS (continued)

- h. Buffer Zones. There shall be no irrigation within 300 feet of any down gradient, sinkhole, losing stream or water supply withdrawal; 300 feet of any lake or pond used for water supply; 100 feet of other ponds and lakes; 100 feet of gaining streams; 50 feet of intermittent or wet weather streams; 150 feet of dwelling; or 50 feet of the property line.
- i. Public Access Restrictions. Public access shall not be allowed to the irrigation site(s).
- j. Equipment Checks during Irrigation. The irrigation system and application site shall be visually inspected at least once/day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.